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The Role of the Financial Expert

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Edited by
Roman L. Weil
Daniel G. Lentz
Elizabeth A. Evans

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CHAPTER 27

FEDERAL SECURITIES ACTS AND AREAS OF EXPERT ANALYSIS*

Kevin L. Gold
Eric Korman
Ahmer Nabi

CONTENTS

27.1 INTRODUCTION

This chapter discusses areas of expert analysis arising from cases involving alleged violations of the Federal Securities Acts. We first provide a brief summary of portions of the acts that an expert will find relevant. Next, we review legal measures of damages prescribed by these acts and case law. Finally, we discuss three areas in which experts often provide analysis: the event study, the but-for price or true-value line, and aggregate damages estimation.

*The authors acknowledge Nicholas I. Crew and Marnie A. Moore, who coauthored—with Kevin L. Gold—versions of this chapter that appeared in prior editions of the *Litigation Services Handbook*. This chapter retains much of their work.

27.2 FEDERAL SECURITIES ACTS

The Securities Act of 1933,[1] the Securities Exchange Act of 1934,[2] and the Priva Securities Litigation Reform Act of 1995[3] constitute the federal regulatory instr ments of interstate securities transactions. These laws attempt to ensure that t investing public has sufficient information to enable it to rely on the integrity the securities market while also protecting securities issuers against abusive litig tion. Below we describe the relevant laws and some of their key sections.

(a) Securities Act of 1933

The 1933 act regulates the registration requirements and initial distribution of security.

(i) Section 11: Civil Liabilities on Account of False Registration Statement Section 11 pr vides cause of action to a security's purchaser if the issuer's registration stat ment falsifies or omits a material fact.[4] A material fact is any information a ration investor would use to make a well-informed investment decision.[5] Plaintiffs c charge the issuer, its directors, or any party that prepared or certified the regi tration statement (or any report or valuation related to the statement), such accountants, appraisers, or underwriters. Defendants can avoid liability by pro ing that the plaintiffs knew of the untruth or omission when they purchased t security.[6] However, plaintiffs do not need to prove a defendant's scienter (i. guilty knowledge or intent) to establish a § 11 claim.

(ii) Section 12: Civil Liabilities Arising in Connection with Prospectuses and Communic tions Section 12(1) allows the purchaser in an offering to file a cause of actic against any person who offers or sells a security in violation of § 5, which prohibi the sale or delivery of unregistered securities.[7] Section 12(2) prohibits the selling securities through distribution of a prospectus or oral communication that omi or falsifies material facts via interstate commerce or the mail.[8] As with § 11, defe dants can avoid liability by proving that the purchaser knew of the untruth omission. The seller can avoid liability by proving that it did not know, or cou not have known, of the omission or untruth.

(b) Securities Exchange Act of 1934

The 1934 act addresses security transactions in the aftermarkets (i.e., securiti traded after the initial public offering, or IPO). It requires periodic filings with t Securities and Exchange Commission (SEC) and deems as unlawful activities su as fraudulent transactions, insider trading, market manipulation, omitted mat rial information, and misstatements in filed documents.

Fraud generally falls into two categories: actively disclosing false informati and failing to disclose material information (including correcting previous disc sures known to be false). Courts have also ruled that confirmatory informati that inappropriately prolongs a period of inflation (even without increasing t level of inflation) may be actionable.[9]

(i) Section 9: Prohibition Against Manipulation of Security Prices Section 9 prohibits a person from engaging in any action that gives a false or misleading appearan

with respect to the market for the security.[10] This includes market manipulation such as creating a misleading appearance of active trading; misrepresenting the price of a security through a series of transactions; broker-dealers circulating information intended to manipulate a security's price; and abusing the trading of options to induce the security's purchase or sale.[11]

(ii) Section 16: Directors, Officers, and Principal Shareholders To prevent the unfair use of information by persons who have access to privileged information, § 16(b) places restrictions on an issuer's directors, officers, and principal shareholders from realizing a profit from the sale or purchase of the security within six months of the initial transaction. Recovery of such profits under § 16(b) is possible if the defendant bought and sold the security within a six-month period. Rule 10b-5 addresses insider sales outside the six-month period.

(iii) Rule 10b-5: Employment of Manipulative and Deceptive Devices Rule 10b-5, promulgated under § 10(b) of the Securities Exchange Act of 1934, deems it unlawful to make use of any means or instrumentality of interstate commerce, or of the mails or of any facility of any national securities exchange, to do the following:

- Employ any device, scheme, or artifice to defraud;
- Make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading;[12] or
- Engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security.[13]

(c) Private Securities Litigation Reform Act of 1995

The 1995 Reform Act creates and redefines provisions of the 1933 and 1934 acts. The new and amended provisions aim to reduce abusive litigation on issuers and provide a limitation on damages while improving the quality of information provided to investors.

(i) Section 101: Private Securities Litigation Reform Section 101, which added and amended sections to the 1933 and 1934 acts, aims to reduce abusive litigation by imposing requirements on the plaintiff class that, in effect, authenticate the plaintiff's intentions. These requirements mandate that the lead plaintiff file a certification with the complaint. The changes are designed to deter the "professional plaintiff."[14] In addition, § 101 changes the mechanism for appointing the lead plaintiff. Section 27(a)(3) of the 1933 act and § 21D(a)(3) of the 1934 act require that the court appoint a lead plaintiff to represent the best interests of the plaintiff class. The plaintiff has the responsibility to give early notice to all potential members of the plaintiff class of the action taken against the defendant company. Within 60 days of the required (widely published) notice, any member of the class can request to be appointed as the lead plaintiff by the court.[15] Prior to the Reform Act, the plaintiff in the first complaint filed became the lead plaintiff. The new provision gives the plaintiffs with a higher financial stake in the security, such as institutional investors, more control over the litigation.

Section 27(a)(7) of the 1933 act and § 21D(a)(7) of the 1934 act require certain communications with plaintiffs regarding settlements; the subjects of these communications include the amount of damages both on an aggregate and on a per-share basis. Also, if counsel seeks an award of attorneys' fees or costs, counsel must disclose the amount on a per-share basis and include a brief explanation of the charges.[16]

Amendments to the 1934 act target abusive litigation by requiring heightened pleading standards. These amendments include the following:

- **Misleading statements and omissions.** Section 21D(b)(1) of the 1934 act requires that, for actions taken against issuers for making misleading statements (or omitting material facts), the complaint must clearly state why the statement is misleading (or why the omitted information is material).[17]
- **Required state of mind.** As stated in § 21D(b)(2), for each misstatement or omission of material fact made by the defendant, the complaint must "state with particularity facts giving rise to a strong inference that the defendant acted with the required state of mind" (e.g., deliberate deception) for the plaintiffs to collect any awarded damages. Plaintiffs must justify each allegation addressed in the complaint with the defendant's intentions and the facts explaining the reason for the false statement or omission and the defendant's intentions.[18]

(ii) Section 102: Safe Harbor for Forward-Looking Statements The Reform Act of 1995 creates a new provision of the 1933 and 1934 acts that restricts plaintiffs' causes of action regarding management's plans for the future. Section 27A of the 1933 act and § 21E of the 1934 act state that a defendant is not liable for untrue statements or omission of material facts if the statement or omission was made in a forward-looking statement; these documents include management plans for future operations, forecasted economic performance, and projections of revenues and earnings. Issuers or any party directed by the issuer making the statement must clearly identify it as a forward-looking statement; "meaningful cautionary" language outlining factors that could cause the forward-looking statement to change materially should accompany the statement.[19]

(iii) Section 105: Loss Causation Section 105 amends § 12(b) of the 1933 act and § 21D(b)(4) of the 1934 act to require plaintiffs to show that the defendant's actions caused the loss in the security's value. Specifically, § 105 defines the actionable loss as "the depreciation in value of the subject security resulting from such part of the prospectus or oral communication, with respect to which the liability of that person is asserted, not being true or omitting to state a material fact required to be stated therein."[20] Section 21D(b)(4) states, "In any private action arising under this title, the plaintiff shall have the burden of proving that the act or omission of the defendant alleged to violate this title caused the loss for which the plaintiff seeks to recover damages."[21]

(iv) Section 201: Proportionate Liability The 1995 Reform Act adds § 21D(g) to the 1934 act. This addition states that plaintiffs cannot coerce peripheral defendants into settlements. Only those who knowingly committed a violation of the securities law are liable. For instance, the defendants are liable if they knew of the false

statement or the omission and also knew that investors were reasonably likely to rely on the misrepresentation or omission.[22]

(v) Section 301: Auditor Fraud Detection and Disclosure Section 301 of the 1995 Reform Act adds § 10A(a) to the 1934 act. It requires that the audit performed by an independent public accountant shall include:

> (1) procedures designed to provide reasonable assurance of detecting illegal acts that would have a direct and material effect on the determination of financial statement amounts; (2) procedures designed to identify related party transactions that are material to the financial statements or otherwise require disclosure therein; and (3) an evaluation of whether there is substantial doubt about the ability of the issuer to continue as a going concern during the ensuing fiscal year.[23]

If the audit reveals fraud, the accountant has a responsibility to report the illegal acts to the appropriate parties.[24]

27.3 ALTERNATIVE DAMAGES MEASURES

Plaintiffs who prevail on the merits of their securities litigation can recover based on rescission,[25] profits, or unspecified damages, and by statute or court rulings, depending on the circumstance. Plaintiffs file most federal securities claims under §§ 11 and 12 of the 1933 act and § 10(b) of the 1934 act. The 1933 act specifies the damages method, but the 1934 act lacks distinct provisions for calculating damages, leaving the appropriate measure of damages to the court's discretion. Some of these measures use the plaintiff's injury as a benchmark to measure damages, whereas others consider the defendant's gain in the transaction. The 1995 Reform Act includes additional guidelines on estimating damages.

(a) Section 11 of the 1933 Act

Section 11 provides three alternative measures of damages, depending on whether the security is still held or was sold, and if sold, when it was sold. A plaintiff can recover the difference between the amount paid for the security (not to exceed the initial offering price) and the following:

- If still held, the price on the date the plaintiff filed the complaint;
- If sold prior to the date the plaintiff filed the complaint, the sale price;
- If sold after the date the plaintiff brought the suit, the greater of (i) the sale price or (ii) the price on the date the plaintiff filed the complaint.

Furthermore, § 11 allows for damages to be offset by price declines that the defendant can prove relate to factors other than the misrepresentations in the registration statement; this reduction is often referred to as a "negative causation" offset.

(b) Section 12 of the 1933 Act

If the court finds liability under § 12, the plaintiff can recover the consideration paid for such security with interest, less the amount of any income received, upon

the tender of such security, or for damages if the plaintiff no longer owns the security.[26] As with § 11, § 12 includes a negative causation offset provision so that the plaintiff cannot recover the portion of the loss that defendants can prove does not relate to the fraud.

(c) Section 9 of the 1934 Act

We are not aware of any case law on the measure of damages under § 9 of the 1934 act.[27] In *Piper v. Chris-Craft Industries, Inc.*, however, the Supreme Court's language suggests that, if a court finds liability, it should compute damages as the difference between the security's transaction price and the price absent the manipulative act.[28]

(d) Section 16 of the 1934 Act

Section 16(b) provides that the plaintiff recover the profit the defendant realized in connection with insider trading abuses. It does not define profits, and in the event of multiple sales and purchases at different prices, the issue of profit calculation becomes ambiguous. In *Smolowe v. Delendo Corp.*, the court chose to calculate profits by matching the highest sale price to the lowest purchase price, matching the next highest sale price to the next lowest purchase price, and so on.[29]

(e) Section 10(b) of the 1934 Act and Rule 10b-5

The courts have not reached consensus on the appropriate measure of damages under § 10(b) and Rule 10b-5. Section 10(b) contains no statutory remedy,[30] and because the parties settle most Rule 10 b-5 cases, few court decisions on the measure of damages exist. For example, a December 2014 study by KCC, a class action claims administrator and noticing agent, showed that only 20 securities class actions[31] filed since the enactment of the 1995 Reform Act have progressed to trial. Of these, we find that only nine cases with claims under § 10(b) reached a verdict.

Following a strict interpretation of the term *actual damages* in § 28(a) of the 1934 act and the lead of the Supreme Court in *Affiliated Ute Citizens of Utah v. United States*, many courts have adopted the out-of-pocket rule as the traditional measure of damages in Rule 10b-5 cases.[32]

The out-of-pocket measure rule defines damages as "the difference between the contract price, or the price paid, and the real or actual value at the date of the sale, together with such outlays as are attributable to the defendant's conduct. Or, in other words, the difference between the amount parted with and the value of the thing received."[33] Typically, courts measure this as the plaintiff's purchase price less the true value at the time of the transaction. The true value is the price of the security in the absence of fraud or misrepresentation (see Section 27.4(b) of this chapter). Strictly applied, the out-of-pocket rule does not permit damages that depend on increases or decreases in the security's price during the plaintiff's class period (i.e., from the date of the fraud to its disclosure) because the plaintiff agrees to bear market risk by undertaking the transaction.[34] Some courts have adopted a modified out-of-pocket measure that evaluates damages at the disclosure date of the fraud.

Although courts most often apply some version of the out-of-pocket rule, they can apply other measures of damages to suit the remedy to the specific harm.[35] The following sections of this chapter discuss measures adopted by the courts to calculate damages: rescission, restitution (also called windfall profits, disgorgement, or unjust enrichment), and consequential damages.[36] Chapter 4 further discusses these damages measures.

(i) Rescission Rescission involves the restoration of the counterparties to their pre-transaction positions. True rescission involves the return of the security in exchange for the purchase price (plus interest); however, if the holder has already sold the security, the court can use the financial equivalent of rescission. Rescissionary damages equal the value of the security that would have been returned, estimated as either the market value on the date of the complaint or the highest intervening market value.[37] The courts generally restrict rescission to cases with privity (i.e., direct dealings) between the plaintiff and the defendant or when a breach of fiduciary duty or unjust enrichment occurs.[38]

(ii) Restitution In contrast to monetary damages, restitution, sometimes called *windfall profits*, disgorgement, or unjust enrichment, focuses on the defendant's gain rather than on the plaintiff's loss. Unlike rescission, restitution does not require privity between the counterparties.[39] In *Affiliated Ute Citizens of Utah v. United States*,[40] the Supreme Court approved restitution damages, citing *Janigan v. Taylor*, for subsequent resale of the security.[41] The First Circuit Court of Appeals held in *Janigan* that "it is more appropriate to give the defrauded party the benefit even of windfalls than to let the fraudulent party keep them."[42] This ruling follows from the interpretation that federal securities laws attempt both to compensate defrauded parties and to deter fraudulent acts.[43]

(iii) Consequential Damages Plaintiffs can pursue consequential damages—costs they incurred as a result of the fraud—in connection with general, rescissionary, or restitutional damages. Examples of consequential damages established in case law include dividends on securities sold by a defrauded investor, dividends on securities that the plaintiff would have purchased absent the fraud, brokerage fees incurred in the fraudulent transaction, and expenses related to repurchasing the security that the defrauded investor had sold.[44] The courts have usually imposed two restrictions on consequential damages:

1. The plaintiff must establish a causal relation between the expense and the fraud.
2. Consequential damages cannot duplicate the recovery from other damages measures.[45]

In general, the latter restriction does not bind when the court adopts the out-of-pocket rule or restitution as the measure of damages.[46]

(f) Section 21D(e) of the 1934 Act (Limitation on Damages)

Plaintiffs and defendants have presented numerous variations of damages partly attributed to the security's price fluctuating widely for a period of time following the curative disclosure. Section 21D(e) of the 1934 act (as added by the 1995

Reform Act) seeks to reduce the variation of damages by allowing a look-back (also known as "bounce-back") period whereby damages cannot exceed "the difference between the purchase or sale price paid or received, as appropriate, by the plaintiff for the subject security and the mean trading price during the 90-day period beginning on the date on which the information correcting the misstatement or omission that is the basis for the action is disseminated to the market."[47] The legislation has an exception provision: if the plaintiff sells or repurchases the security before the expiration of the 90-day period, the plaintiff's damages "shall not exceed the difference between the purchase or sale price paid or received . . . and the mean trading price of the security during the period beginning immediately after dissemination of information correcting the misstatement or omission and ending on the date on which the plaintiff sells or repurchases the security."[48]

27.4 THE EXPERT'S ROLE

This section discusses three areas in which experts often provide analysis:

1. **Event study.** A well-recognized technique to examine security price movement associated with the release of information. It can help establish materiality of the information and loss causation.
2. **But-for price line.** The value of the security absent the fraud each day during the class period, which is used in the out-of-pocket measure of damages.
3. **Aggregate damages to the class.** Based on actual trading records or estimates of trading behavior using a trading model.[49]

While the discussion below focuses on expert analysis for § 10(b) and Rule 10b-5, certain of the analyses may also apply to other types of claims. For example, event studies account for market-, industry-specific, or other factors unrelated to the plaintiffs' allegations that could have contributed to the decline in a security's price. Experts can use such analyses to calculate the negative causation offset under § 11 and § 12.

Most securities cases are "buyer" suits brought on behalf of purchasers of securities who claim that share prices were inflated as a result of the fraud. However, there are "seller" suits in which sellers claim the price was depressed as a result of the fraud. For example, the seminal case of *SEC v. Texas Gulf Sulphur*, 401 F.2d 833 (2d Cir. 1968) was brought on behalf of sellers who sold their securities at prices below what they would have had the company released information related to its mineral deposits discovery. Unless otherwise noted, the remainder of the chapter will assume a purchasers' suit in which the wrongdoings are alleged to have inflated prices.

(a) Event Study Methods

When a dispute or litigation requires an analysis of security price changes in response to a news disclosure, experts must often distinguish the materiality and magnitude of the disclosure. An event study is a statistical approach that experts often use to analyze these two issues.

(i) Definition of Event Study In its most common form, an event study involves a statistical regression analysis of a time series of security returns, with the objective of identifying and measuring firm-specific effects of identified information releases, referred to as events.

(ii) Illustrative Example Exhibit 27-1 lists the daily closing prices and returns of an equity security issued by hypothetical Firm S and market index returns for a 51-day period surrounding a hypothetical announcement date. Date "0" (zero) is the date of the event in question. As the exhibit shows, on date zero, the security's return of the firm was negative 5.03 percent, and the market return was 1.40 percent. The event study provides a way of assessing how much of the firm's return on date zero results from market effects and whether the residual return

	Firm S				Firm S		
Event Date	Closing Price	Stock Return	Market Return	Event Date	Closing Price	Stock Return	Market Return
−25 . . .	$34.00	10.66%	1.41%	1 . . .	$32.05	4.68%	1.41%
−24 . . .	33.46	(1.58)	0.57	2 . . .	31.91	(0.46)	(0.85)
−23 . . .	33.48	0.05	1.39	3 . . .	31.03	(2.75)	(0.30)
−22 . . .	32.69	(2.36)	0.49	4 . . .	31.23	0.65	(2.00)
−21 . . .	31.70	(3.03)	0.55	5 . . .	30.59	(2.07)	(0.75)
−20 . . .	31.95	0.79	0.78	6 . . .	32.11	4.98	(0.06)
−19 . . .	31.69	(0.80)	0.090	7 . . .	32.21	0.32	1.49
−18 . . .	32.06	1.15	0.48	8 . . .	33.41	3.72	(0.45)
−17 . . .	32.78	2.27	0.50	9 . . .	31.95	(4.38)	(0.92)
−16 . . .	32.74	(0.12)	0.67	10 . . .	32.27	1.01	0.63
−15 . . .	31.65	(3.33)	0.35	11 . . .	33.39	3.48	(0.44)
−14 . . .	33.18	4.83	1.23	12 . . .	34.42	3.08	1.60
−13 . . .	32.14	(3.13)	1.17	13 . . .	35.01	1.72	(0.66)
−12 . . .	32.23	0.29	0.07	14 . . .	35.77	2.16	(0.81)
−11 . . .	32.10	(0.41)	1.33	15 . . .	36.63	2.41	(0.34)
−10 . . .	30.94	(3.62)	0.57	16 . . .	37.05	1.16	(0.79)
−9 . . .	31.88	3.05	0.96	17 . . .	36.64	(1.12)	1.62
−8 . . .	32.18	0.93	0.79	18 . . .	37.79	3.14	1.33
−7 . . .	31.64	(1.68)	0.19	19 . . .	38.21	1.12	(0.31)
−6 . . .	31.85	0.67	0.10	20 . . .	37.31	(2.35)	0.38
−5 . . .	32.43	1.82	0.28	21 . . .	38.27	2.56	1.16
−4 . . .	32.24	(0.58)	0.18	22 . . .	39.83	4.10	1.18
−3 . . .	30.22	(6.29)	0.72	23 . . .	38.53	(3.28)	0.13
−2 . . .	30.61	1.29	1.42	24 . . .	38.87	0.89	0.16
−1 . . .	32.24	5.35	1.18	25 . . .	39.90	2.65	(0.64)
0 . . .	30.62	(5.03)	1.40				

Exhibit 27-1. Daily Closing Stock Price and Returns for Period of 51 Trading Days Surrounding Announcement Events for Firm S

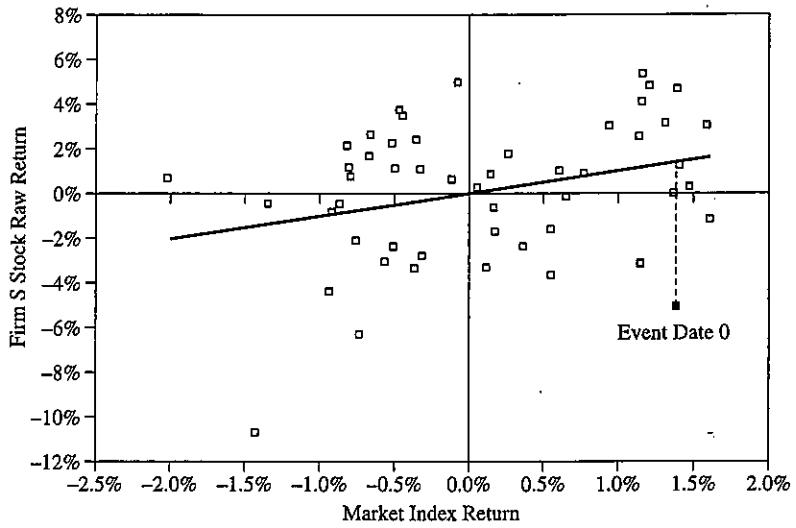

Exhibit 27-2. Firm S Returns versus Market Index Returns

(i.e., the remaining portion of the firm return after controlling for market effects) is unusual in a statistical sense.

For the 51 days listed in Exhibit 27-1, Exhibit 27-2 shows a scatter plot of Firm S returns against those of the market index. Each observation shows the firm return (shown on the vertical [y] axis) with the market return on the same day (shown on the horizontal [x] axis). The solid sloping line is the estimated regression line from applying ordinary least squares regression (a standard statistical method to estimate a linear relation) to the available data shown in the exhibit (excluding the date zero return). This line shows the estimated relation between the firm's return and the market return, based on the data in the exhibit. As the exhibit shows, a positive relation exists showing on average, that higher returns of the firm typically occur with higher market returns. In the exhibit, the date zero's point is filled in. Because this point falls below the estimated regression line, the firm return on date zero is lower than expected, based on the normal day-to-day relation estimated between the market and firm. The difference between this point and the solid line (shown in the exhibit by a dotted line) is the firm's residual return. The event study provides a way of measuring whether this *residual return* differs statistically from zero (i.e., whether it is an unusual movement in a statistical sense).

Appendix A provides a more detailed discussion on event studies.

(iii) Ascertaining Materiality with Event Studies In securities cases, counsel often asks the expert to opine on the materiality of information related to the case.[50] For instance, some experts have to ascertain whether false statements or curative disclosures were material in securities cases. Experts have used event study analysis to answer two related questions:

1. Did the disclosure cause a change in the security's value? (materiality of the event)
2. If so, what was the size and direction of the net price reaction to the disclosure, after accounting for the effects of other factors? (magnitude of the event)

This section discusses how experts use event studies to measure the impact of information in the context of securities. Courts have admitted testimony based on appropriate event studies but have excluded testimony based on infirm event studies.[51]

An event study can provide useful evidence in assessing the materiality of an event under consideration.[52] All can agree that important events are material, but this raises the question of how to measure importance. How should a trier of fact ascertain what a reasonable investor would consider material? One could ask a longtime investor to serve as an expert on materiality and even though this might provide useful insight, it introduces a degree of subjectivity that could vary with each case. Instead, the tools of financial economics provide a scientific and objective way to measure materiality as the probability that a security price movement resulted from chance and not from the news about a particular event. One can quantify materiality with an event study in a manner comparable across cases and events.

In assessing materiality, statistical analysis can provide information on the likelihood that the price movement occurred only because of chance. A materiality test based on an event study provides a statistical measure of the likelihood that the observed security price movement in the event window would have occurred if there were no event that influenced security prices in that window. For example, if an event is statistically significant at the 5 percent level, this means that only a 5-percent likelihood exists that the security's normal random price fluctuations could have caused the residual return (or the price movement after one controls for market, industry, and other effects). Alternatively, if the movement is large enough (as defined using a scientific and statistical definition), we can say that we are 95-percent confident that the size of the residual return exceeds what would be expected based on the security's normal random price fluctuations.

Courts have not specified the level of statistical significance that corresponds to a legal definition of materiality.[53] As with much academic research, they commonly use the 95 percent confidence level but also recognize the 90 percent and 99 percent levels as thresholds for statistical significance. Even though definitive case law does not exist on how statistical confidence levels relate to burden of proof in civil (or criminal) litigation, courts can use event studies to quantify the level of materiality, compare it across cases, and assess it using professional standards from economics literature.

Another issue pertaining to materiality (measured by statistical significance) arises when the cumulative price reaction moves in and out of materiality as time passes. For example, if a security's price drops by a large amount on the day of an announcement, the one-day reaction can have statistical significance. However, a rebound on the next day can cause the two-day price reaction to be statistically insignificant, whereas another drop on the third day can cause the three-day price reaction to be statistically significant. In general, experts investigate why the level of materiality changes over the price reaction window. If new information that has no relevance to allegations in the case comes into the market, then the analysis should account for this new information in considering the materiality of the event under examination. In addition, experts examine whether the changes in materiality result from the market's reevaluating the importance of the initial event or information, something that experts often deduce from contemporaneous news stories or analyst reports.

The potential for market overreaction might play a role in security price movements around an event, although there remains some dispute. If the price initially declines after an event and if, on the second day (or a similar short period), the price returns to a level that makes the event immaterial (with no intervening news event), then an expert could conclude that short-term overreaction occurred.[54] When an incomplete disclosure occurs, experts also consider price movements that coincide with the release of subsequent information to ascertain the full effect of the information.

With some types of material information disclosures, one would not expect to observe statistically significant fluctuations in returns. For example, suppose a company issues an earnings statement that meets market expectations. In such a case, one would not expect to see the company's price change much, even though an earnings announcement that confirms expectations provides important information.

(iv) Magnitude Experts also use event studies to measure the size of a security's price movement as the basis for a damages calculation. For example, experts often measure the movement in a security's price in the wake of a curative disclosure—after controlling for market, industry, and other company-specific influences—to measure the inflation in the price of the security (referred to hereafter as "inflation per share").[55]

(b) Constructing the But-For Value Line

For the out-of-pocket measure of damages used in most cases filed under § 10(b) of the Securities Exchange Act of 1934, experts estimate the but-for price: the value of the security absent (i.e., but-for) the fraud. An expert typically estimates the but-for value on a daily basis. The resulting sequence of prices is often called the *but-for price line*, or the *value line*. It represents the value of the security on each day if the market knew the truth that should have been disclosed on that and each previous day. The difference between the actual price and the but-for price is the inflation per share.[56] The inflation per share can vary over time. For example, if a firm perpetuated accounting fraud by increasingly understating its liabilities over a number of years, one might expect the inflation to increase over time as the amount of fraud increased, as Exhibit 27-3 illustrates.

Experts use many approaches to estimate the but-for price line. Many of these approaches use the event study method discussed in Section 27.4(a) and Appendix A to measure the security's price decline associated with curative disclosures. The amount of the security price declines on these curative disclosure dates serve as a basis for measuring the inflation earlier in the class period. The logic of the argument is that when the company disclosed the corrective information on the curative disclosure dates, the security's price declined by an amount of X dollars or Y percent, which indicates the decline that would have occurred had the market known the information earlier in the class period. Similarly, experts often measure the security price increases associated with an allegedly false statement to assess how much the security's price increased as a result of false information. These price increases can provide guidance as to the extent of the price inflation until the curative disclosures.

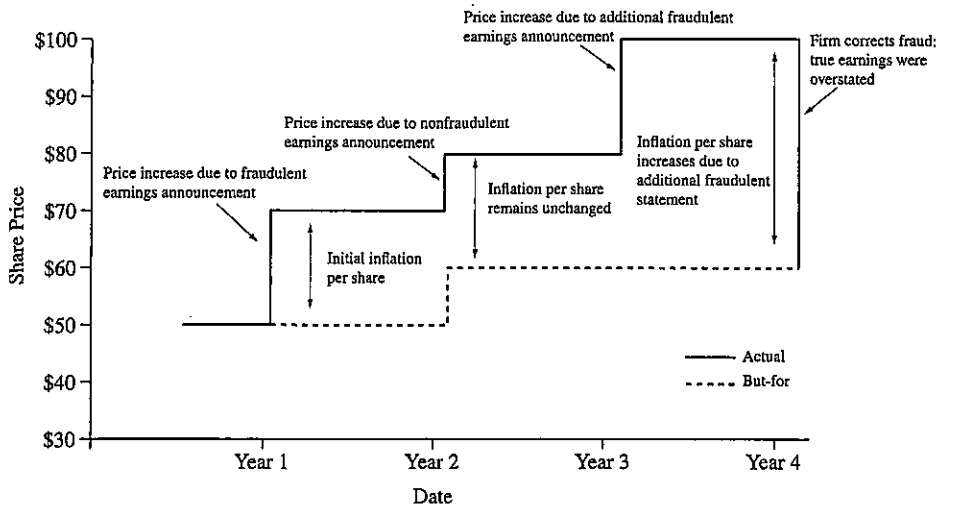

Exhibit 27-3. Share Price Reactions to Announcements

A simple example can help illustrate. Suppose prior to the market opening on Tuesday, a mining firm fraudulently announces it has discovered a valuable mineral deposit worth $100 million. The security's price increases $30 per share, or 30 percent, from $100 to $130. The security's price remains at $130 until Friday. On Friday, prior to the market opening, the company corrects the fraud by announcing that no valuable deposit exists. The security's price declines $30. Exhibit 27-4A illustrates the timeline for this simple example.

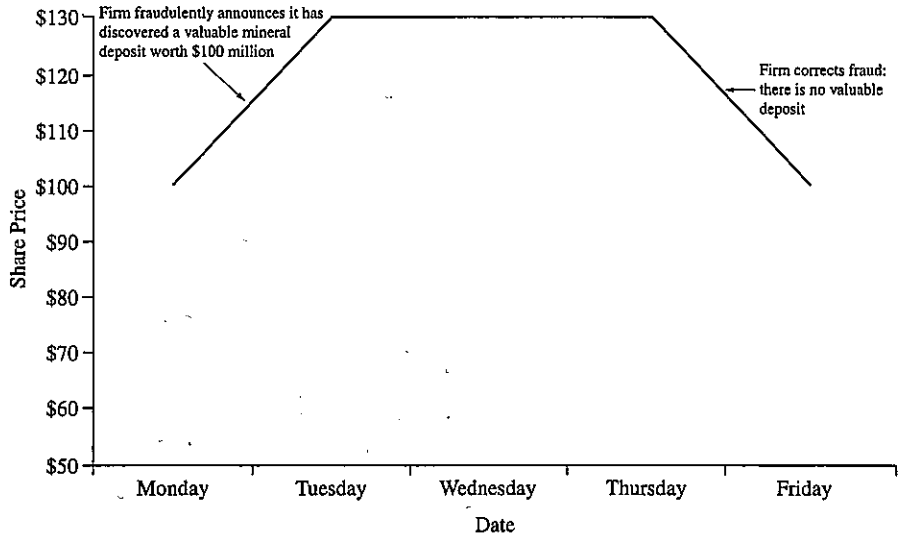

Exhibit 27-4A. Share Price Reaction to Announcements

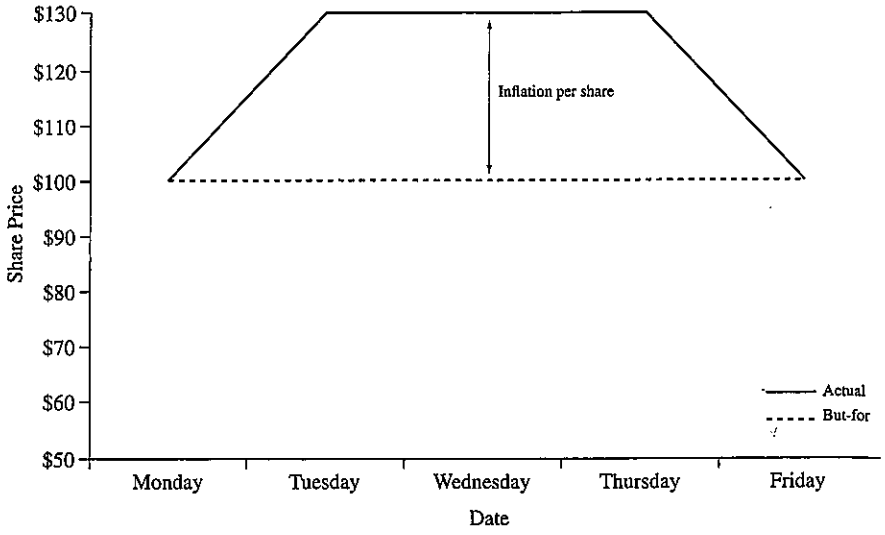

Exhibit 27-4B. Illustration of Inflation per Share

The expert's analysis includes a news search, examination of industry and market conditions over the period, and an event study. The expert finds that the relevant industry and market factors did not change on Monday and ascertains that, after controlling for these factors, none of the $30 increase resulted from industry and market factors. After other considerations, which include establishing that no confounding news events occurred on Monday, the expert concludes that the $30 increase results from the announcement. The expert performs a similar analysis for Friday and finds that the $30 decline does not result from other factors and instead results from the curative disclosure. Exhibit 27-4B plots the expert's but-for price line associated with this analysis. As the exhibit shows, the but-for price is $100 per share on each day during the class period. An investor who purchased one share for $130 with the belief that the company had found a mineral deposit overpaid by $30. The but-for value (i.e., the value had the truth been known) was, according to the expert's analysis, $100.

Of course, reality is rarely so simple. Many issues complicate the analysis. For example, firms often combine the curative disclosure with other information, making the security's price increase or decline an unreliable measure of the effects of the fraudulent information at issue.

Courts have also considered the possibility that information may leak out to some market participants before a major disclosure event, which would indicate that measuring the price decline only on the date of the major disclosure event would understate the effect of the fraud on the security's price before the information was fully known. For example, in *Glickenhaus & Co. v. Household Intern*, the Seventh Circuit affirmed the use of a "leakage" model, which posited a gradual exposure of fraud rather than full and immediate disclosure.

Another complication arises when the disclosed curative information likely did not affect the security's price by a constant amount for the entire class period.

For example, if a company announces restated financials covering the last three years, one generally cannot attribute the entire decline associated with the full three-year restatement to inflation throughout the entire class period. Class members who purchased early in the class period purchased under less fraud. Early in the class period, the fraud would have a smaller magnitude—in the first fiscal quarter of the class period, only one fiscal quarter of financials would be false, not three years.

A related issue that applies especially to long class periods surfaces when market conditions change over time; analysts cannot conclude that the decline that occurred with the curative disclosure is a reasonable estimate of the inflation earlier in the class period under different market conditions. For example, suppose an announcement of accounting fraud at a firm with shares trading at $1.00 resulted in a price decline of 60 percent, dropping the price to $0.40. Applying the percentage decrease of 60 percent on this date to calculate the but-for price two years earlier may not be reasonable if the security's price was trading at $100 two years earlier.[57] Similarly, applying the observed $0.60 decline as the inflation two years earlier when the security traded at $100 may not be reasonable.

Another complication exists in identifying when the inflation entered the security's price. Statements that allegedly inflated the security's price often do not result in an observed price increase when they are made. For example, one might not expect large increases in share prices for a firm that inflated its security's price by falsely reporting high earnings when doing so meant that the firm met market expectations.

To help resolve these issues, experts often incorporate additional analyses beyond the event study. For example, experts have used valuation models, such as discounted cash flow models or multiples models that employ fundamental information, to help estimate the effect of accounting information on the value of the securities. The approaches that experts use to address these issues vary by case.

(c) Estimating Damages

Under the out-of-pocket measure, the but-for line and a plaintiff's actual trades (or an estimate thereof) provide the basis for estimating a plaintiff's damages. The out-of-pocket measure defines the damages per share for an individual transaction as the difference between the inflation of the security's price at purchase and the inflation at sale.[58] In other words, the plaintiff incurs damages to the extent that he or she paid too much (i.e., purchased with inflation); however, the damages diminish to the extent that the plaintiff benefited from selling at an inflated price.[59] For example, a plaintiff who bought 100 shares with inflation of $5 on the purchase date and sold those shares after a partial curative disclosure reduced the inflation to $1 would incur total damages of $400 [= 100 shares × ($5 – $1)]. This calculation is straightforward in principle if the expert knows actual trades, although complications can exist, such as whether to use FIFO or LIFO share accounting methods and whether transactions with gains can offset losses. Moreover, experts sometimes do not have information on actual trades, especially for a class, and the question of whether an analysis could or should calculate aggregate damages for all class members arises (see discussion in Chapter 28).

In class action lawsuits, no consensus exists on whether the courts should consider expert testimony on aggregate damages for all class members. Some courts

have indicated that expert testimony on aggregate damages helps to provide context to a jury because a jury should decide aggregate damages.[60] However, some courts have ruled that aggregate damages estimates based on trading models are neither reliable nor necessary. The trier of fact need only establish inflation per share at various points in time, and then class members can obtain their award through a proof-of-claim process.[61] For example, of the nine cases with claims under § 10(b) that have reached a verdict since 1996, a review of the jury verdict forms in these cases shows that in at least eight of them, the court asked the jury to determine losses on a per share basis and not on an aggregate basis.[62]

In cases where experts offer testimony on aggregate damages, they may obtain class member trading records (if available) or estimate class member trading behavior and damages using a trading model if such information is not available.[63] However, prior to the proof-of-claim process, experts often find actual trading data difficult to obtain for all class members, as most investors' trading records are not publicly available.

In the absence of trading data or to supplement it, experts often use trading models to estimate the trading behavior of shareholders during the class period using observable data (such as daily volume and shares outstanding, as discussed in Appendix B). The idea of a trading cohort helps clarify this type of model. A trading cohort is a group of shareholders that purchases shares at the same time. Most securities cases assume that the same time means the same day. The analysis combines into a single cohort all non-class members who purchased shares prior to the class period, regardless of the day they purchased the securities. The simplest form of the trading model (often referred to as the proportional trading model) assumes that on any given day, all shareholders sell the same proportion of their holdings. The proportion of holdings each cohort sells varies each day depending on the day's volume.[64]

Some experts have refined the proportional trading model by developing trading models with richer and more realistic assumptions. Instead of assuming all shareholders are similar, these models allow for different shareholder trading behavior.[65] Two common alternative trading models are the accelerated trading model and the multi-trader model. Both models assume that the propensity to trade differs among traders, but differentiate traders in different ways.

The accelerated trading model assumes that on a given day cohorts that have recently purchased are more likely to sell (i.e., they sell a large proportion of their holdings) than cohorts that purchased earlier. In other words, the accelerated trading model attempts to model the concept that shareholders who have held their shares a long time will be less likely to trade than those who have recently purchased their shares.

The multi-trader model assumes that the propensity to trade differs among types of traders. For example, a two-trader model assumes two types of traders—those who trade frequently (active traders) and those who do not trade as frequently (investors). As a result, active traders trade and re-trade more often. A particular cohort consists of both active traders and investors, but active traders are less likely to retain shares than are investors.

Estimates of aggregate damages with accelerated and multi-trader models are often 20 to 30 percent lower than those calculated by the proportional trading

model. Each case is unique, however, and sometimes damages from the alternative models exceed those of the proportional trading model.

Little, if any, scientific support exists in the form of peer-reviewed articles to show that trading models provide an accurate estimate of class member damages. In *Kaufman et al. v. Motorola, Inc., et al.*,[66] Judge Gettleman rejected the proportional trading model because it failed to meet any of the four *Daubert* standards.[67] Judge Gettleman found that professional economists did not accept the proportional model, which seemed to have been developed solely for securities litigation. The court also viewed a trading model as unnecessary: "An adequate remedy may be fashioned by having the jury determine a per share damage loss and requiring the filing of claims by each shareholder who claims that he, she or it has been damaged."[68] Despite their additional complexity and more realistic assumptions, the accelerated and multi-trading models appear to suffer from the same problems identified by Judge Gettleman. Nevertheless, courts have not reached a consensus on the appropriateness of using trading models and/or calculating aggregate damages, leaving it to the court's discretion to select the most reliable method of estimating damages given the unique circumstances in each case.[69]

APPENDIX A: STATISTICAL APPROACH TO THE EVENT STUDY

(a) Creating the Model

(i) Theoretical and Statistical Conditions At least two theoretical conditions should exist if one plans to use an event study approach in a damages analysis or materiality analysis. First, the security of interest must be traded in an informationally efficient market (i.e., one in which prices respond quickly and appropriately to valuation-relevant news). The efficient market condition provides the foundation of the fraud-on-the-market theory in which plaintiffs do not need to show reliance on a particular piece of false information because the share price presumably impounds the information.[70] Second, the expert's statistical model of the return-generating process must be valid throughout the sample period.[71]

An event study proves most useful under three conditions:

1. Return data for the security as of the event at issue as well as a control period are available, and the expert has adequate data to allow estimation of the coefficients on the market and other indices of interest (e.g., industry indices) as well as the firm-specific variability of returns (i.e., the standard deviation of returns after abstracting from market and industry effects).
2. The securities trade often enough so that each return covers a short period, such as a day or week.[72]
3. The parties can identify the event in question with one or more announcements that have relatively certain timing and the event announcements do not contain a great deal of valuation-relevant information unrelated to the issue in question. Economists refer to information unrelated to the issue in question as *confounding events or confounding information.*

An expert will have more difficulty identifying the effects of the event in question in a return series for a thinly traded security because fewer returns exist and because (for multiday returns) all the news events during the several days covered by each return can affect that return, introducing confounding information. In addition, the variability inherent in a return series is a function of the time period covered by the return. We would expect two-day returns to have twice the variance of one-day returns and so on.

(ii) Model Specification An event study of security returns seeks to partition the variation of returns to a given security into two components: general market-wide effects (expected to affect multiple firms, albeit in potentially different ways) and firm-specific effects. For example, for a single-factor model in which market

performance is the only market-wide factor affecting returns, the regression equation would be as follows:

$$r_{st} = \alpha_s + \beta_s r_{mt} + \varepsilon_{st} \quad (1)$$

where

r_{st} = return to security s on day t
α_s = market model intercept for security s
β_s = market model beta for security s
r_{mt} = market index return on day t
ε_{st} = firm-specific residual return to security s on day t

In the variation over time of $(\alpha_s + \beta_s r_{mt})$, the component of r_{mt}, reflects market-wide effects. Experts refer to this component as the systematic (or predictable, conditional on knowledge of the market or industry effects) portion of the return. The next component, ε_{st}, is the firm-specific effect.

Experts often augment the basic single-factor model expressed in Equation (1) by including one or more industry indices. For example, an expert might include a market index such as the S&P 500 and an industry index composed of firms in the same Standard Industrial Classification (SIC) code, which presumably reacts to the same industry-specific common factors. The resulting augmented market model would be:

$$r_{st} = \alpha_s + \beta_s r_{mt} + \beta_{is} r_{it} + \varepsilon_{st} \quad (2)$$

This model has two slope coefficients: one for the relation between the subject security's return and the market index, and one for its relation with the industry index r_{it}. Both coefficients measure the sensitivity of the subject security returns to index returns. Studies include these additional factors (e.g., industry indexes) to increase the proportion of the variance of total returns (the left-hand variable) that they explain, thereby reducing the variance of the firm-specific residual returns.

If the security at issue is a corporate bond, an expert could include a corporate bond index comprising bonds with similar credit ratings and/or tenors (i.e., time to maturity) and an industry index of bonds issued by firms in the same SIC code.

(iii) Model Estimation Experts usually estimate the relation between the individual subject security returns and the indices using a statistical estimation method such as ordinary least squares (OLS) on a sample of returns taken from the case-specific estimation period. The solid sloping line in Exhibit 27-2 shows the OLS estimate of the regression line, based on all data in the exhibit except the event-day return. Thus, the solid sloped line corresponds to the estimated market model equation.

$$r_{st} = a_s + b_s r_{mt} + e_{st} \quad (3)$$

where a_s and b_s = the OLS estimates of α_s and β_s in Equation (1).

Given a_s, b_s, r_{st}, and r_{mt}, we can compute e_{st}, the estimated counterpart of ε_{st}. Whether e_{st} is a residual or a prediction error depends on whether the estimation sample includes the return for day t. Experts typically compute the estimated event-day residual return e_{s0} as a prediction error. As we have done in our

example, they compute a_s and b_s from an estimation sample without the event-day return and compute e_{s0} as the deviation of r_{s0} from the estimated regression line shown as the solid line in Exhibit 27-2:

$$e_{s0} = r_{s0} - (a_s + b_s r_{m0}) \tag{4}$$

On the event date, this residual return component corresponds to the dotted vertical line in Exhibit 27-2; it numerically measures the abnormal return or residual associated with the announcement (i.e., the residual difference between the conditional forecast and the actual return). Statistical theory then provides a means to judge the statistical significance of this residual return.

(b) Interpreting the Model

Experts use two measures of the estimated relation between individual security returns and returns to the index (or indices):

1. The magnitude (and statistical significance) of the regression slope (beta) coefficient(s)
2. The explanatory power of the regression expressed in terms of R^2 (i.e., the fraction of the variance of returns explained by the regression)

(i) Beta Coefficient In the context of the market model, the slope coefficient (β_s in Equation (1)) is the security's beta, which measures the security's systematic risk. A beta coefficient of 1.0 means that the security's returns change, on average, as much as the market index returns in response to the common factors captured in the index. Coefficients greater or less than 1.0 indicate securities whose expected returns vary more or less than average in response to the common factors.

(ii) Statistical Significance The statistical significance of the estimated coefficient measures the reliability of its estimated sign and magnitude, based on the coefficient's standard error. The OLS regression calculations produce a standard error for each estimated coefficient to gauge the size of the discrepancy between the estimated value and the underlying true value.

Statistical theory provides that a confidence interval centered at β_s and extending for two standard errors in each direction will include the true value β_s approximately 95 percent of the time. In many applications, one can restate this condition as that of requiring that the t ratio (the ratio of the estimated coefficient to its standard error) be greater than two or less than negative two.

Most event studies have greater interest in the statistical significance of the estimated effect of the event in question (i.e., the significance of the residual return on the event day) than in the slope coefficients.

(iii) Standard Deviation of the Return Series When returns' variability differs substantially across securities, then a return of a given magnitude can be unusual for one firm but frequently observed for another. A common measure of the variability inherent in a given return series is the time series standard deviation of returns,

which measures the typical dispersion of returns around their mean over some period.[73]

Statistical theory shows that approximately two-thirds of normally distributed returns should fall within plus-or-minus one standard deviation of the mean return, and about 95 percent of all returns should fall within plus-or-minus two standard deviations of the mean return. Thus, one would observe by chance (i.e., on a day selected at random) a return that exceeded two standard deviations from the mean no more than 5 percent of the time, assuming normally distributed returns.

(iv) Explanatory Power: R^2 A regression's R^2 (R-squared) measures the explanatory power of the regression. In the case of a market model regression, the R^2 measures the fraction of the variance in security returns that the market index returns explain. The higher the R^2, the greater the portion of a given security's return explained by the index returns (see Chapters 8 and 9).

(v) Calculating the Statistical Significance of the Event-Day-Specific Return Standard regression theory provides a means to measure the statistical significance of the estimated residual (i.e., prediction error) on the event date. Experts often use the augmented market model, expressed in Equation (5), as a computationally convenient approach to calculate the statistical significance of an event-day-specific return:

$$r_{st} = \alpha_s + \beta_s r_{mt} + \Upsilon_{sA} d_{At} + \varepsilon_{st} \tag{5}$$

where d_{At} is an indicator variable for the date of the information event under study (i.e., d_{At} equals one on the date of announcement a and zero on all other dates). Experts often refer to the coefficient Υ_{sA} as an event parameter because it measures the sensitivity of returns of security s to information events of type A.

Let g_{sA} be the OLS estimate of Υ_{sA} in a regression that includes both the original estimation sample for Equation (2) and the event-date observation. This event parameter g_{sA} equals the prediction error at the event date as defined previously and its standard error and t-ratio account for the effect of the estimation error in the regression line. If g_{sA} is statistically significant, then the event date return is unusual in a statistical sense.

APPENDIX B: TRADING MODEL DISCUSSION

As discussed in the body of this chapter, in class action securities lawsuits, there is no consensus on whether the courts should consider expert testimony on aggregate damages for all class members. Some courts have determined that estimates of aggregate damages may be helpful to the jury or for purposes of mediation, settlement discussion, or trial preparation. In cases where experts offer testimony on aggregate damages, they may rely on class member trading records (if available). In instances where investors' actual trading records are unavailable, a trading model may be used to assist in estimating trading behavior.

Trading models typically require two inputs: volume and float. Trading models do not define *volume* as the trading volume reported by the exchange (which serves as a starting point), but rather as the number of shares purchased by a particular day's cohort. The float is not the shares outstanding (which serves as a starting point) but instead is the shares for which the trading behavior is unknown and that are being modeled.[74] In practice, to implement trading models, experts often make the following types of adjustments to reported daily volume and shares outstanding to calculate the volume and float inputs that go into the trading model.

(a) Market Maker and Intraday Trading

Experts usually reduce reported volume to account for over-counting that results from market maker, specialist, and other intraday trading in the marketplace.[75] Because the expert often assumes constant damages per share within a day, traders who buy and sell within the same day do not suffer any damages resulting from fraud. Their gains from inflation at sale just offset their losses due to inflation at purchase.

However, finding an accurate estimate of what portion of the volume is due to such trading can be difficult. Different studies have arrived at very different estimates for the portion of daily trading volume that is represented by market maker or other intraday trading activity. For example, Anderson and Dyl,[76] in a follow-up study to Atkins and Dyl's study on reported trading volumes,[77] estimate a median decrease in reported market transactions of about 50 percent for firms switching from Nasdaq to NYSE, but the volume change varies across firms. They attribute this decrease in volume to the Nasdaq structure in which dealers play a larger role than on the NYSE. Madhavan and Sofianos report that specialist participation rates (i.e., the ratio of specialist purchases and sales to total reported volume) averaged approximately 25 percent in their sample but varied widely across firms.[78] Hendershott and Seasholes find that 14 percent of

the average daily trading volume on the NYSE is traded by market makers.[79] In addition, Brogaard, Hendershott, and Riordan estimate that high-frequency trading was responsible for approximately 42 percent of trading volume in large stocks, 28 percent of trading volume in mid cap stocks, and 18 percent in small stocks during 2008 and 2009.[80] These varying results, which also cover different time periods, are examples of difficulties in using trading models. Given these challenges, testimony that relies on trading models may be susceptible to *Daubert* challenges.

(b) Institutional Trading

Institutions that manage at least $100 million file their holdings each quarter with the SEC on Form 13F. Furthermore, shareholders that own more than 5 percent of a given class of publicly traded security must file ownership reports (Schedule 13D or 13G) with the SEC. These filings can provide information on whether institutions or other large shareholders traded or held shares during the class period. Some experts remove from the float the institutional shares that were not traded; others use the quarterly holdings to calculate damages separately for each institution.

(c) Short Sales

In a short sale transaction, an investor sells shares borrowed from another investor. At a later date, the short sale investor buys the shares and returns them to the original owner. The short interest for a given security represents the aggregate short position of investors. When the short interest increases (i.e., short sellers sell more shares short), short sellers have in effect increased the float because the shares they sell are, in effect, borrowed and resold. Many experts increase the float to reflect the additional shares trading as a result of shorting. Also, when the short position decreases, experts often adjust the daily volume to reflect the fact that short sellers have made some of the purchases on that day. Short sellers, who speculate that a share price will decrease, are typically not considered part of a class harmed by alleged inflation.

(d) Buybacks and Offerings

When a company buys back shares, the float decreases by the amount of the buyback. If the reported daily volume includes the buyback, then the expert usually removes the amount of the buyback from the volume on the day the buyback occurs and reduces the float from that point onward. A securities offering increases the float. If the reported daily volume does not include the shares in the offering, the expert should increase the reported daily volume to reflect the fact that the cohort on the day of the offering also purchased the shares in the offering. Again, to the extent that some investors buy and sell the shares on the offering day (often called *flipping shares*), the volume arising from buying and selling in the same day should not count as part of the cohort purchase for that day.

(e) Insiders

Insiders are often defendants and not part of the class. Experts usually exclude their shares from the float and the volume. When insiders sell to the public, the float usually increases. The shares they held become available for trading and enter the model. When insiders purchase from the public, the float decreases. Also, on days when insiders purchase shares in the open market, the expert can reduce the volume in calculating the volume purchased by the damaged cohort because volume entering the trading model should include only purchases made by class members.

NOTES

1. Securities Act of 1933, § 1 et seq., 15 U.S.C. § 77a et seq.
2. Securities Exchange Act of 1934, § 1 et seq., 15 U.S.C. § 78a et seq.
3. *Securities Litigation Reform*, Report 104-369, November 28, 1995.
4. 15 U.S.C. § 77k(a).
5. In *Omnicare, Inc., v. Laborers District Council Construction Industry Pension Fund*, the Supreme Court ruled that statements of opinion are actionable under Section 11 if the speaker did not hold the belief that was expressed or if the supporting fact that was supplied was untrue. The Supreme Court also ruled that a statement of opinion is actionable under Section 11 if the registration statement omits material facts about the "issuer's inquiry into or knowledge concerning a statement of opinion, and if those facts conflict with what a reasonable investor would take from the statement itself" (*Omnicare, Inc., v. Laborers District Council Construction Industry Pension Fund*, 575 U.S. ___, 2015 WL 1291916 (U.S. Mar. 24, 2015, p. 12).
6. Id.; *McFarland v. Memorex Corp.*, 96 F.R.D. 357 (N.D. Cal. 1982).
7. 15 U.S.C. § 77(e).
8. 15 U.S.C. § 771(2).
9. See, for example, *FindWhat Investor Group v. FindWhat.com* (2011).
10. 15 U.S.C. § 78(i)(e).
11. 15 U.S.C. § 78(i)(a), (b), and (c).
12. In *Janus Capital Group, Inc., v. First Derivative Traders*, the Supreme Court specified that for Rule 10b-5 purposes, the "maker" of a statement is the person or entity with "ultimate authority over the statement, including its content and whether and how to communicate it . . . [w]ithout control, a person or entity can merely suggest what to say, not 'make' a statement in its own right" (*Janus Capital Group, Inc., v. First Derivative Traders*, 131 S. Ct. 2296 (2011), p. 2).
13. 17 CFR 240, 10b-5.
14. *Securities Litigation Reform*, Report 104-369, November 28, 1995, p. 4.
15. *Id.*, p. 8.
16. *Id.*, p. 11.
17. *Id.*
18. *Id.*, p. 12.
19. *Id.*, p. 15.
20. *Id.*, p. 22.
21. In *Dura Pharmaceuticals, Inc., v. Broudo*, the Supreme Court ruled that plaintiffs invoking the fraud-on-the market theory must demonstrate loss causation by pleading and proving a causal connection between the alleged fraud and the investment's subsequent decline in price. The court held that only showing that the security's price was inflated at the time of the purchase is insufficient to meet this requirement. In

Halliburton v. Erica P. John Fund, the Supreme Court held that the fraud-on-the-market theory may be rebutted at the class certification stage by showing that alleged misrepresentations did not affect the security's price.

22. *Securities Litigation Reform*, Report 104-369, November 28, 1995, p. 27.
23. *Id.*, p. 28.
24. *Id.*
25. Rescission is the cancellation of a contract and the return of the parties to their positions had the transaction or contract not occurred (e.g., the purchaser of the shares surrendering the shares in exchange for the purchase price of the shares). See Chapter 4.
26. 15 U.S.C. § 771(2).
27. 15 U.S.C. § 78i(e).
28. 430 U.S. 1, 51 L. Ed. 2d 124, 97 S. Ct. 926 (1977). Cited in M. J. Kaufman, *Securities Litgations: Damages* (Deerfield, IL: Clark Boardman Callaghan, 1992), p. 5.
29. *Smolowe v. Delendo Corp.*, 136 F.2d 231, 239 (CA2 1943). Cited in Kaufman, *Securities Litigations: Damages*, p. 12.
30. See R. A. Thorup, "Theories of Damages: Allowability and Calculation in Securities Fraud Litigation," *Securities Regulation Law Journal* 18 (1990): 25.
31. The 20 securities cases reported by KCC include cases with claims under §§ 10(b), 11, and 12, as well as other claims.
32. See R. B. Lee, "The Measure of Damages under Section 10(b) and Rule 10b-5," *Maryland Law Review* 46 (Summer 1987): 1267.
33. *Estate Counseling Serv., Inc., v. Merrill Lynch, Pierce, Fenner & Smith, Inc.* Cited in T. J. Mullaney, "Theories of Measuring Damages in Security Cases and the Effects of Damages on Liability," *Fordham Law Review* 46 (1977): 281.
34. See Thorup, "Theories of Damages: Allowability and Calculation in Securities Fraud Litigation," p. 32.
35. *Id.*
36. Other measures of damages that courts have at times adopted include the Chasins measure, cover, and benefit of the bargain. Chapter 4 also discusses these measures.
37. *Myzel v. Fields*, 386 F.2d at 742. Cited in ibid., p. 40.
38. *Mitchell v. Texas Gulf and Sulphur Co.*, 446 F.2d at 105. Cited in ibid.
39. See Lee, "The Measure of Damages under Section 10(b) and Rule 10b-5," p. 1278.
40. 406 U.S. 128, 155 (1972). Cited in ibid., p. 1284.
41. 344 F.2d 781 (1st Cir.), cert. denied, 382 U.S. 879 (1965). Cited in ibid.
42. 344 F.2d at 786. Cited in R. D. Thompson, "The Measure of Recovery under Rule 10b-5: A Restitution Alternative to Tort Damages," *Securities Law Review* 17 (1990): 235.
43. See, for example, *Nelson v. Serwold* (Nelson): 576 F.2d 1332 (1978). Cited in Thompson, "The Measure of Recovery under Rule 10b-5: A Restitution Alternative to Tort Damages," p. 236.
44. See Lee, "The Measure of Damages under Section 10(b) and Rule 10b-5," p. 1276.
45. *Id.*, p. 1277.
46. See D. B. Dobbs, *Handbook on the Law of Remedies* (St. Paul, MN: West Publishing Co., 1973). Cited in Lee, "The Measure of Damages under Section 10(b) and Rule 10b-5," p. 1277.
47. Securities Litigation Reform, Report 104-369, November 28, 1995.
48. *Ibid.* It is not clear how the bounce-back rule should be interpreted in the event of partial disclosures, and the authors are not aware of any case law that provides guidance.
49. As discussed later, some courts have ruled that it is not necessary for an expert to calculate damages for the class. A jury can decide inflation per share (with expert testimony as guidance) and class members would establish their damages individually through a proof-of-claim process in which they provide their trading records.

50. Material information is generally defined as information that would be important to a reasonable investor in valuing a security and making investment decisions. Note that, in *Amgen, Inc., v. Connecticut Retirement Plans and Trust Funds*, the Supreme Court held that proof of materiality was not a prerequisite to class certification.
51. *In re Executive Telecard, Ltd. Securities Litigation*, 94 Civ. 7846 (CLB) (S.D.N.Y. 1997); *In re Xcelera.com Sec. Litig.*, 2008 WLC 7084626 (D. Mass. 2008); *In re Northfield Labs., Inc., Sec. Litig.*, 267 F.R.D. 536 (N.D. Ill. 2010); *Bricklayers and Trowel Trades Int'l Pension Fund v. Credit Suisse Sec. (USA) LLC*, 2014 WL 1910961 (1st Cir. 2014). See also *In re Seagate Technology II Securities Litigation*, C-89-2498(A)-VRW (N.D. Cal.), in which the court accepted some of the defendants' event studies and dismissed certain claims on that basis but ruled that the defendants' other event studies were inadequate and denied their request for summary judgment with regard to those issues. The court also found the plaintiffs' event studies lacking and therefore denied a cross-motion for summary judgment. See also *Goldkrantz v. Griffin*, QBS: 02760800 (S.D.N.Y. 1999), in which the court granted summary judgment based on the plaintiffs' failure to contest the defendants' event study analysis.
52. In the context of a claim under § 11 of the Securities Act of 1933, defendants can use an event study as part of a negative causation analysis to show that some portion of the security's price decline relates to factors other than the misrepresentations in the registration statement.
53. See, for example, *Matrixx Initiatives, Inc., v. Siracusano*, No. 09-1156, 2011 WL 977060 (U.S. Mar. 22, 2011).
54. The Private Securities Litigation Reform Act (PSRLA) 90-day bounce-back rule, in effect, recognizes the possibility of overreaction to a curative disclosure.
55. For convenience, we use "share" in this section under the assumption that the security at issue is an equity security. We note, however, that the methodologies and analyses discussed could apply to any type of security subject to the Federal Securities Acts (e.g., corporate bond, mortgage-backed security).
56. The majority of securities cases are "buyer" suits brought on behalf of purchasers of securities who claim that share prices were inflated as a result of the fraud. However, there are "seller" suits in which sellers claim the price was depressed as a result of the fraud. For example, the seminal case of *SEC v. Texas Gulf Sulphur*, 401 F.2d 833 (2d Cir. 1968) was brought on behalf of sellers who sold their securities at prices below what they would have had the company released information related to its mineral deposits discovery. In the remainder of this chapter, almost all of our discussion will assume a purchasers' suit in which the wrongdoings are alleged to have inflated prices.
57. At least one court has determined that under *Dura Pharmaceuticals, Inc., v. Broudo*, it is not appropriate to measure inflation in this manner (i.e., using a constant percentage inflation approach) (*In re Williams Securities Litigation*).
58. There may be modifications to this. For example, as stated in *Dura v. Broudo*, a plaintiff who buys and sells under the same fraud should not be damaged. However, individual experts often appear to disagree on how to reconcile this with their but-for price line calculation and the out-of-pocket measure.
59. Some cases have indicated that any loss in a security's value before a corrective disclosure cannot be related to any alleged fraud, implying that holders that sell before such a disclosure are not damaged. See, for example, *In re Williams Securities Litigation* (N.D. Okl. 2007), *In re Daou Systems, Inc., Securities Litigation* (9th Cir. 2005), and *In re Redback Networks, Inc., Securities Litigation* (N.D. Cal. 2007).
60. Bigelow, 327 U.S. 251 at 264 (1946). Also see, for example, *In re Oxford Health Plans Securities Litigation* (2003), in which the court held that testimony on aggregate damages was admissible, and *In re Helionetics, Inc., Securities Litigation* (1998), in which the use of a trading model to estimate aggregate damages was not challenged.
61. Cases in which the court did not allow testimony on aggregate damages include *In re Clarent Corp. Securities Litigation* (N.D. Cal. 2005); *Bell v. Fore Systems, Inc.*, WL 32097540 (W.D. Pa. 2002); and *Kaufman et al. v. Motorola, Inc., et al.*, No. 95-1069 (N.D. Ill. 2000).

Citing *In re Scientific-Atlanta, Inc., Securities Litigation* (2007) and *In re Broadcom Corp. Securities Litigation* (2005), the court in *BankAtlantic Bancorp, Inc., Securities Litigation* (2010) noted that "the proper way to arrive at an actual damage number in securities litigation is to present evidence of damages on a per share basis." The court also ruled that "since the amount of aggregate damages will not be known in this case until the completion of a claims administration following trial, which involves the calculation of each claimant's damages on a per share basis, the amount of aggregate damage is purely speculative until then. Such speculative evidence is inadmissible especially since discussion at trial of an aggregate damages number in the many millions of dollars is likely to distract the jury and unfairly prejudice Plaintiffs."

62. See *BankAtlantic Bancorp, Inc., Securities Litigation* (S.D. Fla. 2010); *Clarent Corp. Securities Litigation* (N.D. Cal. 2005); *In re Apollo Group, Inc., Securities Litigation* (D. Ariz. 2008); *In re Homestore.com, Inc., Securities Litigation* (C.D. Cal 2011); *In re JDS Uniphase Corp Securities Litigation* (N.D. Cal. 2007); *Jaffe v. Household Intl.* (N.D. Ill. 2009); *In re Vivendi Universal S.A. Securities Litigation* (S.D.N.Y. 2010); *In re Longtop Financial Technologies Limited Securities Litigation* (S.D.N.Y. 2014).
63. For example, in *In re Homestore.com, Inc., Securities Litigation* (C.D. Cal 2011), actual trading records collected during the process of distributing settlement funds from the defendants that settled prior to trial were used in conjunction with the jury's per-share damages determination to quantify the damages owed by the remaining defendant after trial.
64. For example, suppose that trading volume on a given day for a stock with 1.0 million shares available for trade (i.e., the "float") was 10,000 shares, meaning that 1 percent of the total float was traded that day. The proportional trading model is based on the assumption that the shares from each cohort are equally as likely to trade; therefore, under the proportional trading model, each cohort is assumed to sell the same proportion (in this example, 1 percent) of their holdings.
65. The financial literature has shown that there are differences in investor behavior. For example, see B. Barber and T. Odean, "Boys Will Be Boys: Gender, Overconfidence, and Common Stock Investment," *Quarterly Journal of Economics* 116 (February 2001): 261–92; and T. Odean, "Do Investors Trade Too Much?," *American Economic Review* 89 (December 1999): 1279–98.
66. *Kaufman et al. v. Motorola, Inc., et al.*, No. 95-1069 (N.D. Ill. 2000).
67. Chapter 3 of this handbook discusses *Daubert* standards.
68. *Kaufman et al. v. Motorola, Inc., et al.*, No. 95-1069 (N.D. Ill. 2000).
69. See, for example, *In re Broadcom Corp. Securities Litigation* (2005). As noted by the court in *Broadcom*, trading models may be useful for trial preparation, settlement discussion purposes, and mediation.
70. *Basic, Inc. v. Levinson*, 485 U.S. 224 (1988).
71. It is important that the underlying properties of the model (that is, the coefficients and standard error) be similar during the estimation and event periods (see, for example, John Binder, "The Event Study Methodology since 1969," *Review of Quantitative Finance and Accounting*, 1998, p. 113), which states that "[i]t is assumed that the coefficients are constant during the estimation and event periods." The security price's sensitivity to the market (that is, its beta) during the estimation period of the event study model should be similar to its sensitivity during the event period. Otherwise, the benchmark daily returns may be based on a relationship between the security and the market that no longer holds true during the event period, which could introduce bias into estimated abnormal returns.
72. The first event studies used monthly returns and a large cross section of firms to examine the average effect of an event undergone by many firms (such as earnings announcements and dividend announcements). In the context of litigation, most event study analyses use only one firm because the event is specific to the litigation.
73. The time series standard deviation of the return series equals the square root of its time series variance. Variance is a statistical measure of the spread or dispersion in

a distribution from its mean or average. A larger variance means a greater spread in the distribution. The variance of a large sample of observations is the average of the squared deviations of the sample values from the sample mean.

74. For example, experts exclude shares from the float that are known not to have traded in the class period and exclude shares from the float if they are calculating damages on those shares separately.
75. A market maker is a bank or brokerage firm that facilitates the trading of shares by posting bid-and-ask prices along with maintaining an inventory of shares for a particular stock. A specialist is a type of market maker that is specific to the NYSE. In a dealer market (as opposed to an auction market), a market maker is on each side of every transaction (buy and sell), causing the trading volume to be overstated. For example, although the same 10 shares of a stock are sold by one investor and purchased by another investor, the dealer reports 20 shares traded for both the buy and sell transactions, causing the trading volume to be overstated by 10 shares.
76. See A. M. Anderson and E. A. Dyl, "Market Structure and Trading Volume," *Journal of Financial Research* 28 (March 2005): 115–31.
77. See A. B. Atkins and E. A. Dyl, "Market Structure and Reported Trading Volume: NASDAQ versus the NYSE," *Journal of Financial Research* 20 (Fall 1997): 291–304.
78. See A. Madhavan and G. Sofianos, "An Empirical Analysis of NYSE Specialist Trading," *Journal of Financial Economics* 48.2 (May 1998): 189–210.
79. Hendershott and Seasholes find that NYSE specialists (also known as "designated market makers") make up 11.85 percent of the daily trading volume and competing market makers make up 2.1 percent of the daily trading volume. See T. Hendershott and M.S. Seasholes, "Liquidity Provision and Stock Return Predictability," *Journal of Banking & Finance* 45 (2014): 140–151.
80. See T. Brogaard, T. Hendershott, and R. Riordan, "High-Frequency Trading and Price Discovery," *The Review of Financial Studies* 27, no. 8 (Aug. 2014): 2267–2306.

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